

What is claimed is:

1. A reactive hot melt composition in the form of free-flowing pellets, the composition comprising:

5 a cross-linkable resin including at least one copolymer of ethylene with an ethylenically unsaturated monomer, the resin including one or more of an ethylene-acrylic acid copolymer, an ethylene-methacrylic acid copolymer, and an ethylene-acrylic acid-methacrylic acid terpolymer;

a free radical cross-linking initiator having a 1 hour half-life temperature of from about 110 to about 170°C; and

10 a foaming agent.

2. A composition as claimed in Claim 1, wherein the said resin constitutes from about 37 to about 60 percent based on the total weight of the composition,

3. A composition as claimed in Claim 1, wherein the composition also comprises from about 10 to about 30 percent based on the total weight of the composition,  
15 of an adhesion promoter for providing adhesive properties to the composition at temperatures of from about 50 to about 100°C, wherein the adhesion promoter comprises at least one of a plasticizer and a tackifier.

4. A composition as claimed in Claim 1, which also comprises from about 10 to about 40 percent based on the total weight of the composition, of a filler.

20 5. A composition as claimed in Claim 1, wherein one or more of ethylene-acrylic acid copolymer, ethylene-methacrylic acid copolymer, and ethylene-acrylic acid-methacrylic acid terpolymer is present in an amount of from about 10 to about 40 percent based on the weight of the total composition.

25 6. A composition as claimed in Claim 1, wherein the free radical cross-linking initiator is a peroxide.

7. A composition as claimed in Claim 3, wherein the adhesion promoter comprises both a plasticizer and a tackifier.

8. A composition as claimed in Claim 1, wherein the resin comprises one or more of a terpolymer containing acrylate and/or methacrylate units, a maleic anhydride

grafted elastomer, an ethylene-acrylate-glycidyl methacrylate polymer, an ethylene-acrylate-maleic anhydride polymer, an ethylene-vinyl acetate-maleic anhydride polymer, an ethylene-vinyl acetate copolymer, an ethylene-methylacrylic ester copolymer, an ethylene-ethylacrylic ester copolymer, a ethylene-butylacrylic ester copolymer and a rubber.

5                   9. A composition as claimed in Claim 8, wherein the ethylene-vinyl acetate copolymer is present in an amount of from about 5 to about 20 percent, based on the total weight of the composition.

10                   10. A composition as claimed in Claim 8, wherein one or more of the methacrylate- and acrylate-containing copolymers or terpolymers is present in a total amount of up to about 30 percent, based on the total weight of the composition.

11. A composition as claimed in Claim 8, wherein the rubber is present in an amount of up to about 30 percent by weight, based on the total composition.

12. A composition as claimed in Claim 1, further comprising an oil.

15                   13. A composition as claimed in Claim 1, wherein the foaming agent is present in an amount of from about 0.1 percent to about 4 percent by weight, based on the total composition.

14. A composition as claimed in Claim 13, wherein the composition expands from about 150 to about 250 percent on curing.

20                   15. A reactive hot melt composition in the form of free-flowing pellets, the composition comprising:

- a) from about 37 to about 60 percent based on the total weight of the composition of a cross-linkable resin including at least one copolymer of ethylene with an ethylenically unsaturated monomer;
- b) from about 10 to about 30 percent based on the total weight of the composition of an  
25   adhesion promoter for providing adhesive properties to the composition at temperatures of from about 50 to about 100°C, wherein the adhesion promoter comprises at least one of a plasticizer and a tackifier;
- c) from about 0.5 to about 3 percent based on the total weight of the composition of a free  
30   radical crosslinking initiator having a 1 hour half-life temperature of from about 110 to 170°C; and

- d) from about 10 to about 40 percent based on the total weight of the composition of a filler; wherein component a) includes one or more of an ethylene-acrylic acid copolymer, an ethylene-methacrylic acid copolymer, and an ethylene-acrylic acid-methacrylic acid terpolymer, and
- 5 e) from about 0.1 to about 4 percent based on the total weight of the composition of a foaming agent.

16. A reactive hot melt composition in the form of free-flowing pellets, the composition comprising:

- a cross-linkable resin including at least one copolymer of ethylene with an ethyleneically unsaturated monomer, the resin including one or more of an ethylene-acrylic acid copolymer, an ethylene-methacrylic acid copolymer, and an ethylene-acrylic acid-methacrylic acid terpolymer;
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a free radical crosslinking initiator having a 1 hour half-life temperature of from about 110 to about 170°C; and

- 15 a filler.

17. A method of preparing a palletized reactive hot melt composition adhesive composition as claimed in Claim 1 or Claim 15, comprising:

compounding the components of the composition; and

palletizing the resulting composition to produce a dry free flowing material.

- 20 18. A method as claimed in Claim 16, wherein the components are compounded at a temperature of less than about 150°C.

19. A method of adhering a first component to a second component, comprising the steps of melting a composition as claimed in Claim 1 or Claim 15, contacting the first and second components with the melted composition; and applying heat
- 25 to cure the composition.